



UNITED REPUBLIC OF TANZANIA

MINISTRY OF HEALTH AND SOCIAL WELFARE

**IMPLEMENTATION GUIDELINES FOR
VITAMIN A SUPPLEMENTATION AND
DEWORMING**

September 2011

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**Tanzania Food and
Nutrition Centre[TFNC]**



**Expanded Program
on Immunization[EPI]**



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Preface

Vitamin A deficiency (VAD) threatens the health and survival of children and women in Tanzania by depressing the immune function and increasing the risk of serious illnesses. Eliminating VAD as a public health problem in Tanzania, is an essential element of the child survival agenda. Similarly, endemic worm infestation, currently seen in Tanzania, is detrimental to child growth and development, and requires a robust public health intervention.

Vitamin A supplementation (VAS), is an interventional strategy, used to prevent and control VAD. VAS is estimated to save the lives of 30,000 children in Tanzania every year, and will remain a necessary intervention, until the dietary intake of vitamin A is sufficiently improved, through routine diet and food fortification. Routine deworming, reduces loads of worms among children and allows for the weight gain and better micronutrient absorption. Vitamin A supplements, are provided to children aged 6 to 59 months, twice a year and to postpartum women. Twice-yearly deworming is integrated with VAS, for children aged 12-59 months. Vitamin A supplements are also used therapeutically, in the treatment of xerophthalmia, measles and severe acute malnutrition.

The Implementation Guidelines on VAS and Deworming, is an important job aid for stakeholders, who are involved in the provision of health services, for children aged less than five years and postpartum women, including national level health planners and coordinators, Regional Health Management Teams (RHMTs), Council Health Management Teams (CHMTs) and health service providers. The primary aim of the guideline is, to assist the stakeholders, in planning, coordinating, implementing and monitoring, the provision of VAS and deworming, and to evaluate its performance. These guidelines should encourage a continued commitment, to reach every child and postpartum women in Tanzania, with vitamin A supplements. Sustained high coverage of VAS, will help Tanzania move closer, towards the achievement of the Millennium Development Goal 4, for the reduction of child mortality.

The Ministry of Health and Social Welfare, is dedicated to support the efforts that are aimed at alleviating vitamin A deficiency in Tanzania. The Ministry will ensure that supportive implementation of vitamin A supplementation, integrated with deworming is sustainable through increased budgetary allocations, to meet all the requirements.

It is anticipated that, the combined efforts of stakeholders and health care workers, will ultimately result in improved and sustained vitamin A supplementation and deworming coverage, of the most vulnerable groups.



Blandina S. J. Nyoni
Permanent Secretary
Ministry of Health and Social Welfare

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Development of the Implementation Guidelines, for Vitamin A Supplementation and Deworming is a result of the collaborative effort, between multiple institutions and individuals.

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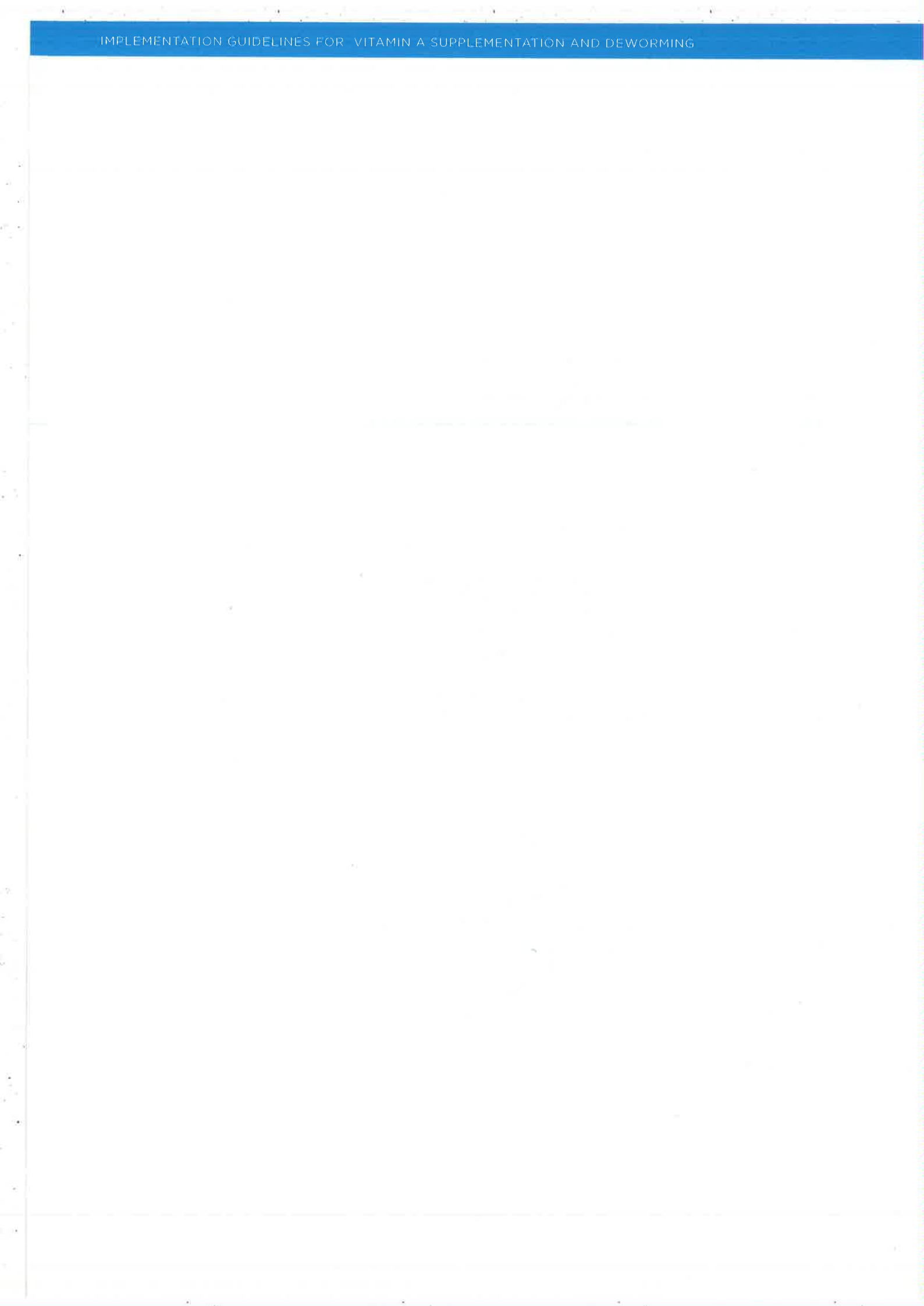
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List of Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
C/DHMT	Council/District Health Management Team
CCHP	Comprehensive Council Health Plan
CHMT	Council Health Management Team
CIDA	Canadian International Development Agency
CMT	Council Management Team
CORPS	Community Owned Resource Person
CPHC	Council Primary Health Care
DAC	Day of the African Child
DHS	Demographic and Health Survey
DMO	District Medical Officer
EPI	Expanded Programme on Immunization
FBO	Faith Based Organizations
HKI	Helen Keller International
HMIS	Health Management Information System
IU	International Units
IEC	Information Education and Communication
IVACG	International Vitamin A Consultative Group
LRTI	Lower Respiratory Tract Infection
MoHSW	Ministry of Health and Social Welfare
MSD	Medical Stores Department
MTEF	Medium Term Expenditure Framework
MTUHA	“Mfumo wa Taarifa wa Utoaji Huduma za Afya”
NBS	National Bureau of Statistics
NGO	Non Governmental Organization
PBT	Planning and Budgeting Tools
PHC	Primary Health Care
PMORALG	Prime Ministers Office – Regional Administration and Local Government
RCDO	Regional Community Development Officer
RCH	Reproductive and Child Health
RHMT	Regional Health Management Team
RPLO	Regional Planning Officer
STH	Soil Transmitted Helminths
TFNC	Tanzania Food and Nutrition Centre
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development
VAC	Vitamin A Capsules
VAD	Vitamin A Deficiency
VAS	Vitamin A Supplementation
VASD	Vitamin A Supplementation and Deworming
WAD	World AIDS Day
WHO	World Health Organization
ZMSD	Zonal Medical Stores Department



Part I: Introduction

1. Control of vitamin A deficiency in Tanzania

1.1 Vitamin A deficiency in Tanzania

Despite social and economic improvements in Tanzania, nutritional deficiencies, including vitamin A deficiency, remain a significant public health problem. The Tanzania Demographic and Health Survey 2010 revealed that 33% of children aged 6-59 months and 37% of women aged 15-49 years are vitamin A deficient.

Vitamin A deficiency is caused by inadequate dietary intake of vitamin A, coupled with repeated episodes of infections that precipitate VAD, including measles, lower respiratory tract infection, persistent diarrhoea and malaria. Children aged less than five year and pregnant women are most at risk because of their high dietary requirements. Breastmilk is an important source of vitamin A, particularly for infants and young children, but many are not breast fed adequately. Complementary foods often contain insufficient amounts of pre-formed vitamin A and provitamin A carotenoids to protect against VAD.

Children who are vitamin A deficient suffer an increased risk of death and illnesses particularly from measles, chronic diarrhoea and upper respiratory tract infections

The consequences of vitamin A deficiency for children include increased morbidity and mortality, poor growth and nutritional blindness (xerophthalmia). For women of child-bearing age, consequences of VAD include night blindness, increased mortality and increased risk of adverse pregnancy outcomes.

1.2 Strategies to prevent and control vitamin A deficiency

As there are several causes of vitamin A deficiency, multiple strategies are needed for its prevention and control. These strategies fall into two main categories: population-based strategies and targeted strategies for high-risk groups (Box 1). Population-based strategies aim to achieve improvements in the dietary intake of vitamin A of the entire population, and are needed for long-term sustainable improvements in vitamin A status in a population. Until this ultimate goal is achieved, groups at highest risk of VAD and its consequences must be targeted with additional strategies to prevent and control vitamin A deficiency.

Box 1: Strategies to prevent and control vitamin A deficiency

Targeted strategies for high-risk groups	Population-based strategies
<ul style="list-style-type: none"> • Vitamin A supplementation • Prevention and control of diseases that precipitate VAD 	<ul style="list-style-type: none"> • Dietary improvement • Food fortification • Production of vitamin A-rich foods through household food production, crop diversification, biotechnology and biofortification

Vitamin A supplementation

Vitamin A supplementation (VAS) is the provision of high dose supplements of vitamin A, usually in the form of vitamin A capsules (VAC). Improving the vitamin A status of deficient children through supplementation enhances their resistance to disease and can reduce mortality from all causes by approximately 23 percent¹. Guaranteeing high supplementation coverage is therefore critical, not only to eliminating vitamin A deficiency as a public health problem, but also as a central element of the child survival agenda.

Vitamin A supplementation is a short to medium-term solution for the control and prevention of vitamin A deficiency, and will need to be continued in Tanzania until the dietary intake of vitamin A is sufficiently improved through dietary improvement and food fortification.

Twice yearly VAS is one of the most cost-effective interventions for improving vitamin A status and reducing infant and child mortality

VAS is targeted to children aged 6-59 months and postpartum women due to their high risk of VAD. Children aged 6-59 months require a vitamin A supplement every six months, as each supplement protects the body from VAD for between 4 to 6 months. Vitamin A supplementation is delivered to children under five years through the Expanded Programme on Immunization (EPI) and through twice-yearly VAS. Every mother should receive a vitamin A supplement within 8 weeks of every delivery.

Dietary improvement

Dietary improvement aims to improve and maintain vitamin A status through changes in behaviour that lead to an increase in the selection of vitamin A-rich foods processing and preparation methods and a meal pattern favourable to increased bioavailability. Such changes can bring about important sustainable improvements, not only in vitamin A status, but for nutrition in general, and are a major long-term strategy to address VAD.

In infancy and early childhood, breastfeeding and complementary feeding practices are key to the prevention and control of VAD. Children should be breastfed immediately after delivery so as to get colostrum which is rich in vitamin A. They should be exclusively breastfed for the first six months of life, and breastfeeding should continue until the child is at least two years of age. Breastmilk is the only source of vitamin A for children aged less than six months, and is a major source of vitamin A for older breastfed children.

From six months of age, appropriate complementary foods must be added to the diet of young children. Animal foods (particularly liver) are the best sources of vitamin A and should be promoted where the situation is economically and culturally appropriate. Even when poverty limits the intake of animal foods, small changes in the dietary intake of plant foods can considerably improve the dietary intake of vitamin A. Orange-fleshed fruits and vegetables such as mangoes, papaya, carrots, and dark green leafy vegetables and tubers like orange

¹ Beaton et al (1993). Effectiveness of vitamin A supplementation in the control of young child morbidity and

fleshed sweet potato are good plant sources of vitamin A, though this vitamin A is much less bioavailable than animal sources. The addition of oil or fat to meals can increase the absorption of vitamin A, because vitamin A is fat soluble. Moreover, red palm oil is a particularly good source of vitamin A.

Awareness creation on dietary improvement is needed through multiple channels. The channels include interpersonal communication by health service providers and extension workers, mass media (radio and television), schools, and traditional channels such as drama, dances and poems.

Prevention and control of diseases

Diarrheal diseases, lower respiratory tract infection and measles are important causes of VAD. Disease control involves interventions to prevent infection through proper sanitary and hygiene practices, presumptive treatment of groups at high risk of infection, and prompt therapeutic treatment.

Food fortification

Fortification of food is a cost-effective and sustainable approach to improving the vitamin A status of a population. Universal fortification of at least one food staple with vitamin A will improve the vitamin A status and of almost all people and lay the foundation for a long-term source of vitamin A. Possible examples of food staples include vegetable oil, wheat flour and maize flour. In Tanzania efforts are underway to fortify food staples with vitamin A, beginning with edible oils/fats.

Infants and young children do not always benefit from fortification of food staples/ because they do not eat enough of these foods to meet their micronutrient needs. Other strategies are therefore needed including “home fortificants” such as micronutrient powders or the fortification of low-cost and appropriately marketed complementary foods.

In emergency situations, children and women are particularly vulnerable to vitamin A deficiency. Food aid provided in these situations and to beneficiaries of other food assistance programmes should be fortified with vitamin A and other micronutrients to prevent VAD and other micronutrient deficiency disorders.

Production of vitamin A-rich foods

Interventions that increase the production of vitamin A rich foods can improve the availability and affordability of these foods for the general population. These interventions include homestead food production, biotechnology and biofortification, crop diversification and livestock production, which tend to fall within the agriculture and livestock sectors. All opportunities should be made to creating linkages between the health sector and these other sectors.

1.3 Vitamin A supplementation in Tanzania

Approaches for distributing vitamin A supplements to children in Tanzania have evolved over the years. In the 1980s, vitamin A capsules were included in the essential drug kit and were distributed through a disease-targeted approach. Vitamin A was given therapeutically to children aged 6-59 months at government owned primary health care facilities to treat xerophthalmia and diseases precipitating VAD².

By 1997, the government recognized that all children are at risk of VAD, and VAS was integrated into routine EPI for all children aged 6-24 months as well as postpartum women. Coverage of VAS through routine EPI services was low (55% in 1999) and did not cover children aged 2-5 years who were also at risk of VAD.

To improve coverage and reach all children aged 6-59 months, VAS was linked with sub-national immunization days for measles in 1999 and 2000. The high coverage achieved through this approach (>90%) led the government to opt for twice yearly VAS of children aged 6-59 months during the commemoration of the Day of the African Child (DAC) on 16 June and World AIDS Day (WAD) on 01 December. These twice-yearly events have consistently achieved over 90% coverage.

Following the successful implementation of twice-yearly VAS, the Ministry of Health and Social Welfare (MoHSW) through Tanzania Food and Nutrition Centre (TFNC) and other stakeholders decided to integrate deworming of children aged 12-59 months with VAS, beginning in December 2004. The rationale behind the integration was the fact that the target groups for VAS and deworming are similar and therefore the concurrent administration of the supplements and deworming drugs would be a cost effective approach. Furthermore, the interventions complement one another because worm infections can reduce the absorption and utilization of vitamin A and thereby reduce body vitamin A stores.

With high coverage of VAS at the national level, the emphasis has turned to improving coverage in low-performing districts (districts with coverage <80%), and in improving the sustainability of VAS in Tanzania by advocating and assisting districts to plan and budget for VAS in their annual Comprehensive Council Health Plans (CCHPs).

² Measles, persistent acute diarrhea, lower respiratory tract infection, and protein-energy malnutrition

2. Control of soil transmitted helminths

2.1 Soil transmitted helminths in Tanzania

Soil-transmitted helminths (STH)³, known commonly as ‘worms’, are a public health problem in Tanzania. Infections usually begin once a child becomes mobile in early childhood, and infections accumulate as the child gets older, peaking in the school-age years and early adulthood. While the burden of infection is lower in preschool-aged children, the implications for their nutritional status are much greater because worm burdens can precipitate micronutrient deficiencies in children with poor diets.

Available data from several parts of Tanzania indicate that 60 to 80% of school children are infected with worms^{4,5}. Worm infections are contracted when walking barefoot in faecal-contaminated soil (hookworms), consuming faecal-contaminated food and liquids and by a lack of adequate sanitation and hygiene, particularly hand-washing. Consequences of worm infections vary depending on the type of worm, the age of the infected individual, their worm load and general health and nutrition status. Consequences include micronutrient deficiencies, particularly of iron and vitamin A, weight loss and poor growth, and intestinal obstruction. These nutritional deficiencies can also impact negatively on the psychomotor and cognitive development of children.

2.2 Strategies to prevent and control STH

Strategies to prevent and control STH include deworming (antihelminthic treatment) of high-risk groups, and the promotion of good sanitary and personal hygiene practices.

In Tanzania, deworming tablets are provided to children aged 12-59 months throughout the country every six months. School-aged children should also be given deworming tablets every six months, but these interventions have not yet reached national coverage. Pregnant women are given a deworming tablet in the second trimester of pregnancy.

Key hygiene and sanitary practices include the use of shoes and latrines, as well as handwashing. Handwashing should be done after defecation, before food preparation, before eating or feeding a child, and after attending to a defecating child.

2.3 Deworming in Tanzania

The deworming of all children aged 12-59 months began in December 2004 when it was linked with the twice-yearly VAS. Since 2004, coverage has been more than 90%.

School-aged children 7 to 14 years are covered through the school-based deworming program. This program was launched in July 2005. It has been implemented in phases with phase one implemented in 11 regions in 2005, phase two in 2007 when 80% coverage was attained, and the last phase in 2008 where six regions in mainland were involved.

³ Common STHs include round worm, hookworms and whipworms

⁴ Knopp et al (2008) Spatial distribution of soil-transmitted helminths, including *Strongyloides stercoralis*, among children in Zanzibar. *Geospatial Health* 3(1), 2008, pp. 47-56

⁵ The Partnership for Child Development (1998). The health and nutritional status of schoolchildren in Africa: evidence from school-based health programmes in Ghana and Tanzania. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 92 (3): 254-261.

Since 2005 pregnant women have been provided with deworming drugs through antenatal clinic visits during the second trimester of pregnancy

3. Purpose of the guidelines

The MoHSW has taken the initiative to develop the Implementation Guidelines for VAS and Deworming in Tanzania to assist stakeholders in planning, coordinating, implementing, and monitoring the provision of VAS and deworming, and to evaluate performance. It focuses on vitamin A supplementation of children aged 6 - 59 months and postpartum women, and therapeutic treatment with vitamin A supplements. It also provides guidance on the deworming of children aged 12-59 months, since this intervention is linked with twice-yearly VAS.

The Implementation Guidelines on VAS and Deworming is an important job aid for stakeholders involved in the provision of health services for children aged less than five years and postpartum women, including national level health planners and coordinators, Regional Health Management Teams (RHMTs), Council Health Management Teams (CHMTs) and health service providers.

These guidelines should encourage a continued commitment to reach every child and postpartum women in Tanzania with vitamin A supplements. Sustained high coverage of VAS will help Tanzania move closer towards the achievement of the Millennium Development Goal 4 for the reduction of child mortality.

Part II: Preventive vitamin A supplementation and deworming

Until vitamin A intake through the diet improves, regular preventive administration of vitamin A supplements (VAS) to children and women is necessary for protection against vitamin A deficiency by improving their vitamin A status. Similarly, until worm infection rates decline to safe public health levels, regular deworming for children and women is necessary. In order to be effective, the correct dose and frequency of administration should be observed.

1. Target groups

1.1 Vitamin A supplementation

The target groups for preventive VAS are:

- Non-breastfed infants aged 0-5 months
- Children aged 6 to 59 months
- Postpartum women within 8 weeks of delivery

1.2 Deworming

The target groups for routine deworming are:

- Children aged 12-59 months
- School-aged children
- Pregnant women in their second trimester

These guidelines consider deworming only for children aged 12 to 59 months through the twice-yearly VAS events.

Other target groups, including school-aged children and pregnant women are addressed by other programmes (school-based deworming programme and antenatal care services).

2. Dose and schedule

2.1 Vitamin A supplementation

Table 1 shows the dose and frequency with which vitamin A supplements are given to children and postpartum women. There are three types of vitamin A capsules commonly used in Tanzania: 100,000 IU capsule which are usually blue in colour, and 200,000 IU capsules which are usually red in colour, 50,000 IU which are usually white opaque in colour. When 50,000 IU vitamin A capsules are not available health service providers should give half a blue capsules (100,000 IU).

Red (200,000 IU) capsules are given to children over 11 months of age. If blue capsules are unavailable, half of the red capsule is administered to children 6-11 months of age.



Table 1: Dose and frequency of VAS for children and postpartum women

Target group	Dose of vitamin A capsule (IU)	Frequency of administration*
Non-breastfed infants aged 0-5 months ⁶	50,000	Once at earliest contact with health worker
Children aged 6-11 months	100,000	Once at earliest contact with health worker after six months of age ⁷
Children aged 12-59 months	200,000	Every six months
Postpartum women within 8 weeks of delivery	200,000	Once at earliest contact with health worker after delivery and within 8 weeks of delivery

* Children should not receive a vitamin A supplement if they received a supplement in the previous one month.

It is important for health care workers to understand that if a child comes to the health centre at 6 months he/she should be given a vitamin A dose (100,000 IU), and it should not be assumed that the child will receive a dose through twice-yearly VAS. Every opportunity should be taken to ensure the child is well covered, an overdosing is difficult.

**It is difficult to overdose on vitamin A.
Monthly doses of vitamin A capsules are within safe limits, as is the administration of a dose within one week after the last supplement.**

It is difficult to overdose a child or non-pregnant woman with vitamin A. Studies show that monthly high doses are still safe for children. In addition, a child dosed within one week of the last supplement is still within safe intake levels⁸. Otherwise side-effects may occasionally occur but are minor, temporary and do not require specific treatment. These transient effects include headache, inter-cranial pressure, nausea and dizziness⁹. When vitamin A is administered in recommended doses, there are no serious or permanent adverse effects.

2.2 Deworming

Table 2 shows the dose and frequency with which deworming tablets are given to children and postpartum women. Both albendazole and mebendazole are effective and very safe deworming drugs for all target groups, including pregnant women in the second and third trimester of pregnancy. Temporary and minor side effects occur in only 1 - 5% of individuals and include nausea and abdominal discomfort¹⁰.

⁶ Almost all mothers are able to breastfeed, however there are some exceptional circumstances in which the mother is unable to do so. They include the death or serious illness of mother, or serious illness or disabilities of the infant which hinder their ability to breastfeed.

⁷ To enable infants to receive the first vitamin A capsule at 6 months of age, at the vulnerable period of life when complementary feeding begins, it would be beneficial to include an additional EPI contact at 6 months of age for VAS. This strategy is currently being considered in Tanzania.

⁸ Allen, LH & Haskell M. (2002). Estimating the potential for vitamin A toxicity in women and young children. *Journal of Nutrition* 132, 2907S-2919S.

⁹ WHO/UNICEF/IVACG Task Force (1997). Vitamin A supplements. A guide to their use in the treatment and prevention of vitamin A deficiency and xerophthalmia. World Health Organization, Geneva.

¹⁰ WHO (2004) How to add deworming to vitamin A distribution. World Health Organization, Geneva.

Table 2: Dose and frequency of deworming

Target group	Dose	Frequency of administration
Children aged 12-23 months*	Mebendazole 500 mg <i>or</i> Albendazole** 200 mg	Every six months
Children aged 24-59 months	Mebendazole 500 mg <i>or</i> Albendazole 400 mg	Every six months
Postpartum women	Mebendazole 500 mg <i>or</i> Albendazole 400 mg	Once at the earliest opportunity in the second trimester of pregnancy

* Infants aged less than 12 months who are suffering from STH should be referred to a medical practitioner for treatment.

** Mebendazole is the drug of choice for deworming children aged 12-59 months in Tanzania because the dose is the same for all children in this age range.

3. Delivery mechanisms for children aged <5 years

3.1 Twice-yearly VAS and deworming

Scheduling

Vitamin A supplementation (VAS) and deworming in Tanzania is distributed through a preventive delivery approach for children aged 6-59 months and is scheduled twice a year around the time of the Day of African Child in June and World AIDS Day in December. It is best to keep to this schedule to ensure an equal interval of 6 months between each dose of vitamin A and deworming tablet. However, if there are good reasons to adjust this schedule (for example, to link VAS and deworming with other health service events such as mass immunization campaigns) then this is acceptable. It is safe to give a child another vitamin A capsule after one month of a previous dose, however, for greatest public health benefits the interval should be kept between 4-6 months.

For a healthy child preventive vitamin A should be given every 4-6 months. For a sick child, however, disease-targeted vitamin A administration should be given IN ADDITION TO regular preventive dosing even if given within one week of each other.

The scheduling cycle for conducting twice-yearly events is elaborated in Annex 1.

Service delivery points

Where possible, existing service delivery points should be used for the twice yearly VAS and deworming. The sites should be located in well-known areas with adequate space for large groups of people, such as health facilities, schools, markets, bus stands, railway stations and government offices. It is important to ensure that the distribution of service delivery sites is done in accordance with population size and density data as well as geographical proximity. Ideally a post should serve 300 and 400 clients in village and town settings, respectively. The in-charge of the local health facility should draw a map showing the location of all service delivery points in their catchments area for easy identification. Where new sites need to be established, representatives from the community should be involved in identifying appropriate sites.

It is important to notify community members through community leaders about the location of the selected service delivery sites in their area during community mobilization meetings and dates of VAS and deworming.

Service providers

Ideally there should be **three service providers** at each service delivery point, although this can be adjusted according to the expected client load:

1. ***Community Mobilizer:*** The role of the community mobilizer is to raise awareness among community members on the benefits, location and scheduling of VAS and deworming. Community mobilizers should have a basic understanding of the benefits of VAS and deworming and should have the necessary interpersonal skills to encourage caregivers to bring their children to receive the services. Any Community Owned Resource Person (CORPs) such as a teacher, civil society leader, agriculture extension worker, faith based leaders or other respected and influential persons could serve as a community mobilizer.
2. ***Vitamin A supplement and deworming drug administrator:*** The administrator of vitamin A supplements and deworming drugs should be trained or oriented on provision of the services. He/she should be able to administer the correct dosage of vitamin A supplements and deworming drugs according to the guidelines. He/she should also have an understanding on safe keeping of vitamin A capsules and deworming drugs.
3. ***Recorder:*** The recorder for VAS and deworming activities should be a literate person who is capable of writing and reading correctly, and understands the service procedures well. The recorder will indicate doses taken on tally sheets which will be used later for reporting coverage.

3.2 Routine EPI

Scheduling

Administration of vitamin A supplements to children through EPI takes place throughout the year. Routine VAS for children is scheduled at 6-month intervals starting from 9 months during measles vaccination onwards. However, children aged 6-8 months are at risk of VAD and the child should receive the vitamin A supplement at the first contact with a health facility from 6 months of age. Plans are underway to introduce a contact at 6 months of age in the routine EPI schedule.

Service delivery points

The service delivery sites for VAS under routine EPI are the same sites where other EPI services are delivered. They include health facilities (hospitals, health centres and dispensaries), outreach services and mobile services.

Service providers

Health service providers for VAS are the same providers for EPI and other health services. They include nurses and nurse attendants.

4. Postpartum women

Scheduling

Women delivering at health facilities should receive 200,000 IU immediately after delivery as part of regular maternity services. Efforts should be made to ensure that maternity wards have adequate vitamin A supplies estimated according to the average number of deliveries at the facility in any given time period.

Women delivering at home should be encouraged by village health workers, community leaders and family members to report to the health facility *within* 8 weeks of delivery, but ideally as soon after delivery as possible, for their vitamin A supplement.

Service delivery points

Service delivery points include maternity wards at both private and government dispensaries, health centres and hospitals.

Service providers

Service providers of VAS for postpartum women are nurses and health attendants.

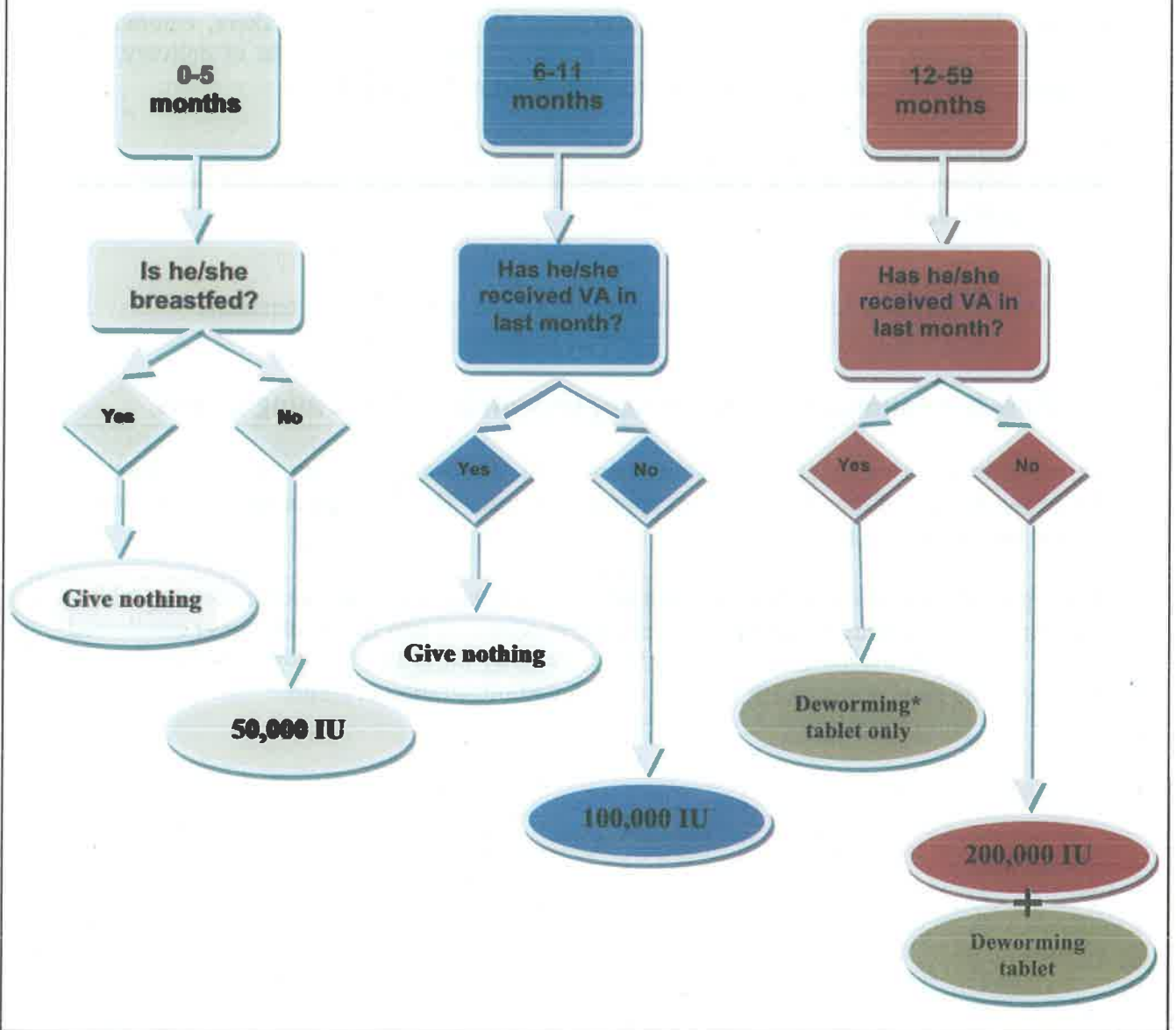
5. How to administer vitamin A supplements and deworming tablets

Before administering vitamin A supplements and deworming tablets it is important to determine the age of the child and their appropriate dose. Box 2 is a flowchart to explain the dosing for children by age.

Box 3 provides guidance on how to administer vitamin A supplements and deworming tablets appropriately. Vitamin A supplements are always squeezed into the mouth, never swallowed whole, whereas deworming tablets should be chewed by the child. All doses should be given directly to the child and not sent with the child for administration at home.

Box 2: How to determine correct doses of vitamin A and deworming medicine by age

Flowchart for determination of vitamin A supplementation and deworming dosing by age



Box 3: How to administer vitamin A supplements**Step 1: Before starting**

- Wash hands with soap and water

Step 2: Greet the caregiver and obtain relevant information

- Greet the caregiver and compliment him/her on coming
- Double check age of child and follow guidelines in Box 2 to determine correct dose

Step 3(a): Administer the vitamin A capsule to the child or woman

- If giving to a child, make sure that child is calm and request the caregiver to hold the child.
- Hold the vitamin A capsule upright with the nipple pointing up
- Cut the nipple with a clean pair of scissors or nail clippers to open the capsule while it is still in an upright position (see Figure 1).

Fig 1: Cut open the capsule

UNICEF Tanzania/2008/Giacomo

Fig 2: Squeeze drops into mouth

UNICEF Tanzania/2008/Giacomo

- Squeeze all the contents (oil drops) of the vitamin A capsule into child's or woman's mouth (see Figure 2 above).
- Throw the empty capsule into a waste bin.

Step 3(b): Administer the deworming tablet to the child

- For children aged 12-59 months, have the child chew and swallow the deworming tablet. If the child cannot chew the tablet, crush it between two spoons, add a small amount of clean water to form a paste and give it to the child.
- Record that a deworming tablets has been dispensed to a child on the deworming tally sheet.

Step 4: Communicate two important messages to the women/caregiver

- "Vitamin A makes the child strong and healthy"
- "Return in 6 months for the next vitamin A capsule and deworming tablet"

Step 5: Record

- Record VAS on both the tally sheet and the RCH card. Often the RCH card will not be available during the twice-yearly supplementation activities, however, remind the caregiver to bring this card the next time.

The following things should be kept in mind during administration of VACs and deworming tablets:

- **Never** give a whole vitamin A capsule to a child to chew or swallow as there is a serious risk that the child will choke on the capsule.
- **Never** give a capsule to a caregiver to administer at home (e.g. if a child is asleep or upset). Request the caregiver to wait until the child is ready to receive the vitamin A supplement.
- If the distribution point runs out of red (200,000 IU) capsules, two blue (100,000 IU) capsules can be given in place of one red capsule. If the distribution point runs out of blue capsules squeeze half the number of drops from a red capsule into the mouth of a child aged 6-11 months. In order to determine how many drops are in a red capsule, open a capsule and count the number of drops while squeezing contents into a waste bin.
- **Never** force a child to take a deworming tablet, as there is a serious risk that the child will choke on the tablet. If the child is upset, request the caregiver to wait until the child is ready to receive the tablet. Never encourage a child to swallow a deworming tablet whole, as there is also a risk of choking. The child should be encouraged to chew the tablet.

Part III: Treatment of Vitamin A Deficiency

Treatment with vitamin A supplements is needed for children suffering from xerophthalmia and diseases that can precipitate vitamin A deficiency (VAD). This treatment is needed IN ADDITION TO, and not in place of their preventive vitamin A supplementation (VAS) because xerophthalmia and other diseases require additional supplementation to recover from illness and restore body vitamin A stores. This section describes the target group for treatment, the dose and treatment schedule, and delivery mechanisms.

1. Target groups for treatment

The following diseases and illnesses require vitamin A supplementation:

- Active xerophthalmia (Night Blindness, Conjunctival Xerosis, Bitot's spots, Corneal Xerosis, Corneal Ulceration and Keratomalacia and Corneal Scars)
- Measles
- Lower respiratory tract infection (LRTI), such as pneumonia and tuberculosis
- Persistent diarrhoea (lasting for more than 14 days)
- Severe acute malnutrition (defined as a mid-upper arm circumference less than 11.5 cm or weight-for-height less than -3 SD)

2. Treatment schedule

Table 3 provides the treatment schedule for xerophthalmia, measles, LRTI and persistent diarrhea for all age groups except women of reproductive age.

Table 3: Treatment schedule for xerophthalmia, measles, LRTI and persistent diarrhea all age groups except women of reproductive age^a

Age	Vitamin A supplementation dose (IU) ^b		
	1 st Day	2 nd Day ^c	2-4 weeks later ^d
0-5 months	50,000	50,000	50,000
6-11 months	100,000	100,000	100,000
12 months and above	200,000	200,000	200,000

^a Vitamin A supplementation is provided in conjunction with treatment of active xerophthalmia (night blindness, corneal ulcers and Keratomalacia), measles, LRTI, persistent diarrhoea (lasting for more than 14 days), and severe acute malnutrition.

^b For oral administration (vitamin A capsules)

^c The mother or other responsible person can administer the next-day dose at home

^d To be administered at a subsequent health-service contact with the individual

Corneal xerophthalmia (corneal ulceration and keratomalacia) is a medical emergency. VAS must be administered immediately according to the schedule shown in Table 3. In order to treat or prevent a secondary bacterial infection, which would compound corneal damage, topical application of an antibiotic eye ointment such as tetracycline or chloramphenicol, is recommended. Ophthalmic ointments containing steroids should never be used in these circumstances. To prevent trauma to the cornea, the eye should be protected by a shield, and in the case of young children, it may be necessary to restrain eye movements.

Women of reproductive age with night blindness or Bitot's spots should be treated with a daily oral dose of 5,000-10,000 IU for at least 4 weeks or weekly doses of 25,000 I.U. for at least four weeks. If these supplements are not available, women should be advised to consume vitamin A rich foods. When severe signs of active xerophthalmia (i.e. acute corneal lesions) occur in a woman of reproductive age, whether or not pregnant, it is necessary to balance the possible teratogenic effect or other risks of a high-dose of vitamin A to the fetus (in case she is pregnant) against the serious consequences (for her and the fetus) of vitamin A deficiency. In these circumstances the high-dose treatment for corneal xerophthalmia as described in Table 3 can be administered¹¹.

Children with severe acute malnutrition¹² are given a single dose on admission (Day 1) unless they have bilateral pitting oedema. Children with bilateral pitting oedema on admission should receive a single dose of vitamin A on week four of treatment. Any child that develops signs of vitamin A deficiency should be treated as indicated in Table 3.

¹¹ WHO (1997). Safe vitamin A dosage during pregnancy and the first 6 months postpartum. Report of a consultation, Geneva 19-21 June 1996, Geneva WHO 1997 (unpublished document WHO/NUT/97.2, available on request from program of Nutrition WHO 1211 Geneva 27, Switzerland)

¹² Diagnosed as a mid-upper arm circumference <11.5 cm and/or weight-for-height z-score <-3 SD and/or bilateral pitting oedema.

Part IV: Supplies and Logistics

The key logistics are those related to procurement, distribution and storage of vitamin A supplements, deworming tablets and related supplies, as well as human resource allocation and transportation. Procurement involves the timely purchase of appropriate quantities of supplies, according to the size of the population, its age distribution and the conditions to be treated.

1. Supplies necessary for VAS and deworming and their sources

The following table presents information on the main supplies needed for VAS& deworming activities. Different partners are responsible for ensuring the correct supplies are provided, as seen in the table.

Table 4: Necessary supplies needed for VAS and deworming

<i>Supply item</i>	<i>Supplier</i>
<i>100,000 IU vitamin A capsules (blue)</i>	Medical Stores Department
<i>200,000 IU vitamin A capsules (red)</i>	Medical Stores Department
<i>Deworming tablets (500 mg Mebendazole or 200/400 mg Albendazole)</i>	Medical Stores Department
<i>Scissors or clean nail clippers to cut capsules</i>	Health facility
<i>Clean safe water and spoons to crush and mix deworming tablets for young children who are unable to safely chew deworming tablets.</i>	Health facility & Parents
<i>Waste basket or box for disposing of empty capsules and other waste</i>	Health facility
<i>Job aids and IEC materials</i>	Tanzania Food and Nutrition Centre
<i>Tally sheets for both VAS and deworming</i>	Tanzania Food and Nutrition Centre/ District Councils
<i>Summary forms</i>	Tanzania Food and Nutrition Centre/ District Councils

For the purposes of the guidelines on supply management, we are only discussing supply issues related to Vitamin A capsules (VACs) and deworming tablets.

2. Supply chain

The supply chain involves close coordination among a number of parties and players.

Yearly supplies

At the national level, TFNC forecasts the supply needs for VACs and mebendazole for the upcoming year. This includes needs for routine, mass and disease-targeted distribution (see Section 3 below for more details on how supplies are forecasted). Currently the list for VACs is provided to UNICEF who procures VACs through a donation from the Canadian International Development Agency. After VAC supplies are received at the port, they are stored at Medical Stores Department (MSD) until they are needed for a distribution round.

Supplies per distribution round

Before each distribution round, TFNC generates a distribution list for each district for predicted needs for VACs and deworming tablets. This distribution list is sent to MSD. MSD is responsible for ensuring each district receives the necessary supplies of VACs and deworming tablets on time. Every attempt is made by TFNC to share these distribution lists with the districts ahead of time for any comment or correction. MSD then transports the supplies to the districts. The district pharmacists receive the supplies on behalf of the District Medical Officer (DMO) for the district. At the district level, the DMO ensures distribution of appropriate amounts of VACs and mebendazole tablets to all health facilities and posts engaged in VAS and deworming activities. At the district level, it is important to ensure that the distribution of service delivery points is done in accordance to population size and density data as well as geographic proximity. This includes providing appropriate capsules for both 100,00 IU and 200,000 IU at each facility.

Timely procurement is important and this requires effective cooperation between the Ministry of Health and Social Welfare and development partners. MSD has to ensure timely distribution of the supplies to districts.

Schedule for procurement of supplies per round

- TFNC submits distribution list to MSD: at least **three months** before distribution round (pending coverage report of previous round from district)
- MSD provides supplies to district: at least **two months** before the distribution round
- District supplies facilities: at least **one month** before distribution

3. Forecasting supply requirements

It is important that the correct estimations are made to ensure adequate supplies are available for the target population without wasting excessive numbers of capsules and tablets.

Estimated supplies for the following target populations are needed: 6-11 month old children, 12-59 month old children and post partum women.

Step 1: Determine the target population for VAS&D for the district

Estimating the target populations

All forecasted supplies are based on target populations provided by the National Bureau of Statistics (NBS), projected from census data. For the first step in calculating the requirements, we need to consider the focal (target) population size. NBS data are presented as below in Table 5. Table 5 is an example of NBS data projections for District X which has 1,324,826 children aged less than 7 years in 2008/09. However, supplies are only needed for children under 5.

- The target population for children 6-11 months of age is equal to half the population of children in the age group indicated as '0.'
- The total population of children 12-59 months of age is equal to the total population in age 1 + age 2 + age 3 + age 4.
- The target population for post partum women is equal to the total number of children age 0 (as this is the same as the total number of new children (i.e births) in one year.

Table 5: Example of district population table (NBS)**District X Population in Single Year
by Sex**

Year	Age(years)	Both Sexes
2009	All Ages	1,324,826
	0	41,962
	1	41,205
	2	39,993
	3	39,477
	4	38,841
	5	38,392
	6	37,236

Based on these calculations, the following target populations for Year 2009 in District X would be:

Children aged 6 – 11 months = $41,962 / 2 = 20,981$

Children 12-59 months = $41,205 + 39,993 + 39,477 + 38,841 = 159,516$

Postpartum women = **41,962**

Step 2: Calculate VITAMIN A needs for MASS DISTRIBUTION (twice-yearly activities). Assume 100% coverage.

We have two types of vitamin A capsules, i.e.

- blue capsules (100,000 I.U.) for children aged 6–11 months
- red capsules (200,000 I.U.) for children aged 12–59 months

We assume distribution losses for each type of supplement to be 5%.

Therefore requirements per round are:

- (i) (a) Vitamin A capsules of 100,000 I.U. (blue capsules) required } Population aged 6–11 months
= 20,981
- (b) + 5% extra to allow for losses/waste = $(20,981 \times 0.05) = 1050$
= 22,031 capsules

Since pack sizes contain 500 capsules, the packs required are

$$\text{Number of packs @ 500 capsules} = \frac{22031}{500} = 44.1 \text{ or } \mathbf{45 \text{ packs}}$$

Do not ignore 0.1 pack as it is equal to 50 capsules

Always round up the next whole number in all calculations!

(ii) (a)	Vitamin A capsules of 200,000 I.U. (red capsules) required	=	$\left. \begin{array}{l} \text{Population aged 12-59 months} \\ \text{Population aged 12-59 months} \end{array} \right\}$ 159,516
(b)	+ 5% added for losses/waste	=	$(159,516 \times 0.05) = 7976$
		=	167,492
	Number of packs @ 500 capsules	=	$\frac{167,492}{500} = \mathbf{335 \text{ packs}}$

Therefore the amounts of vitamin A capsules for 2 rounds of coverage (the entire year) in District X will be double the amount of each.

Table 6: Estimated VAC needs for twice-yearly supplementation

<i>Capsule Type</i>	<i>Packs Requested for 2 rounds</i>	<i>Capsules Requested</i>
100,000 IU capsules	90	45,000
200,000 IU capsules	670	335,000

Step 3: Calculate VAS needs for Routine & Disease-Targeted Distribution requirements

The supplies required for routine administration of preventive vitamin A at the health facilities is calculated using the EPI method. This method is as follows and is broken down by 100,000 IU and 200,000 IU capsules, based on age during EPI visit.

100,000 IU capsules: Calculate the routine supplies of 100,000 IU capsules needed throughout the year.

This is based on the target population of children who will come for their routine measles vaccination at 9 months of age, which is estimated at 80% of the population based on measles immunization coverage rates. As for mass campaign supplies, consult the district NBS office. Again, we assume a 5% loss or buffer against underestimation.

<p>(a) Target population for VAS during routine measles immunization in the year for district X at 80% coverage</p>	}	= children aged <1 year X 80%
		= (20,981 x 0.8) = 16,785
<p>(b) 10% added for disease-targeted (therapeutic) supplementation</p>		= (20,981 x 0.10) = 2,098
<p>(c) Additional coverage for 5% waste</p>		= (20,981 x 0.05) = 1,049
<p>(d) Total capsules needed</p>		= 16,785 + 2,098 + 1,049 = 19,932
<p>Number of packs @ 500 capsules</p>		= $\frac{19,932}{500}$ = 39.86 or 40 packs of 500

200,000 IU capsules: Calculate the routine supplies of 200,000 IU capsules needed throughout the year

The 200,000 IU capsules are needed for both children 12-59 months as well as postpartum women VAS. Children in this age range should be supplemented as soon as possible after they turn 1 year of age every 6 months thereafter. Current coverage rates for children > 1 supplemented through EPI routine coverage is low, estimated across all contact points to be roughly 30%. The target population for postpartum women can reasonably be estimated from the number of children <1 (Age 0).

(1) Children 12-59 months

<p>(a) Target population for VAS during routine measles immunization in the year for district X at 30% coverage</p>	}	= children 12 – 59 months X 30%
		= (159,516 X 0.3) = 47,855

$$(b) \text{ 10\% added for disease-targeted (therapeutic) supplementation} = (159,516 \times 0.10) = 15,952$$

$$(c) \text{ Additional coverage for 5\% waste} = (159,516 \times 0.05) = 7,976$$

$$(d) \text{ Total capsules needed} = 47,855 + 15,952 + 7,976 \\ = 71,782$$

(2) Postpartum women

$$(a) \text{ Target population for VAS during } \left. \begin{array}{l} \text{after delivery of post partum} \\ \text{women} \end{array} \right\} \begin{array}{l} = \# \text{ age 0 children} \\ = 41,962 \end{array}$$

$$(b) \text{ Additional coverage for 5\% waste} = (41,962 \times 0.05) = 2,099$$

$$(c) \text{ Total capsules needed} = 41,962 + 2,099 \\ = 44,060$$

Total 200,000 IU capsules needed for children 12-59 months of age and post partum women

$$= 71,782 + 44,060$$

$$= 115,842$$

$$\text{Number of packs @ 500 capsules} = \frac{115,842}{500}$$

$$= 231.7 \text{ or } \mathbf{232 \text{ packs of 500}}$$

Table 7: Estimated needs for VAC capsules for routine supplementation

<i>Capsule Type for Routine</i>	<i>Packs Requested for 1 year of routine supplementation</i>	<i>Capsules Requested</i>
100,000 IU capsules	40	20,000
200,000 IU capsules	232	116,000

Step 4: Sum the annual Vitamin A capsule requirements

The total supplies of vitamin A for both mass distribution and routine supplies are summed from both individual calculations. In summary, the annual requirement of vitamin A capsules for District X is as follows:

Table 8: Total number of capsules needed for District X for all vitamin A supplementation in year 2009

<i>Capsule Type</i>	<i>1. Mass distribution</i>	<i>2. Routine & therapeutic distribution</i>	<i>3. Total needed</i>
100,000 IU capsules	45,000	20,000	65,000
200,000 IU capsules	335,000	116,000	451,000

The amount to be procured or requested by the district from national level should be determined after adjusting for the amount of vitamin A supplies in stock, of each type, that will not have expired by the end of the programmed year.

Step 5: Calculate deworming tablets required

Calculations for the number of tablets required for deworming is simpler than for that of vitamin A as they are only calculated for mass distribution and for one age group (12-59 month old children).

Calculating the target population

$$\begin{aligned}
 \text{Target population for deworming} &= \text{children aged 12-59 months} \\
 &= \text{Number of children aged 1, 2, 3 and 4 years of age} \\
 &= 41,205 + 39,993 + 39,477 + 38,841 \\
 &= 159,516
 \end{aligned}$$

Calculating the required amount of mebendazole tablets

There is one type of mebendazole, 500 mg tablets, which is a single deworming dose for each child aged 12-59 months. The acceptable distribution losses for the tablets are 5%.

$$\begin{aligned}
 \text{Mebendazole tablets required } \} &= \text{Population aged 12-59 months} + 5\% \text{ waste} \\
 &= 159,516 \times (100\% + 5\%) \\
 &= 159,516 \times 1.05 \\
 &= 167,492 \text{ Mebendazole tablets}
 \end{aligned}$$

Since pack sizes contain 100 tablets, the packs required are

$$= \frac{167,492}{100} = 1,675 \text{ packs}$$

Therefore the amount of mebendazole required for 2 rounds (the entire year) in district X will be double the amount of each round (1,675 packs x 2) = 3,350 packs.

The amount to be procured or requested by the district from national level should be determined after adjusting for the amount of mebendazole in stock that will not have expired by the end of the programmed year.

After completing all 5 steps of this calculation, the total annual need for District X in Year 2009 would be:

Table 9: Final forecasted supply needs for District X in one year

<i>Supply Type</i>	<i>Capsules/Tablets needed</i>	<i>Tins or Packets Requested</i>
100,000 IU capsules	65,000	130 tins @ 500 capsules
200,000 IU capsules	451,000	232 tins @ 500 capsules
Mebendazole	167,500	1,675 packs @ 100 tablets

4. Supplies management

Ensuring that enough Vitamin A capsules and deworming tablets are available is one of the most critical factors for success of VAS. Running out of supplies during supplementation will severely reduce coverage. Once supplies have been received by the district, ensuring an adequate supply to the distribution points is fundamental.

Supplies should be collected or received at least one month in advance of the twice-yearly event, and distributed to all health centres at least two weeks before the supplementation exercise.

4.1 Storage of vitamin A capsules and deworming tablets

Vitamin A capsule

The chemical stability, and therefore the biological activity of vitamin A, is affected by temperature and exposure to sunlight and other sources of ultraviolet light. The useful shelf-life of vitamin A capsule in a properly stored, unopened, opaque container is estimated to be at least 3 years¹³ Therefore they should be stored in opaque containers for protection against light.

¹³ Based on bottle expiry date

Deworming drugs

Storage of deworming drugs is the same as other drugs; therefore the same standard procedure considering chemical stability should be followed and maintained.

In all events it is important to check the expiry date of the capsules and tablets so that any old stock should be used prior to the new stock.

Part V: Planning and budgeting for VAS and deworming

Planning and budgeting for VAS and deworming are important considerations for implementation of program activities and sustainability. Program activities include; procurement and distribution of supplies, financial support, production and distribution of IEC materials and monitoring forms, training and orientation of facilitators and social mobilization. Planning and budgeting are normally done at all levels of program implementation including national, regional, district and community levels.

1. Budgeting under Councils Comprehensive Health Plans (CCHP)

Councils are required to plan and budget in advance for VAS and deworming in the annual CCHP for smooth implementation of program activities including social mobilization, distribution of supplies, administering VAS and deworming, supportive supervision, data compilation and report writing.

With shift of donor support of funding from direct support to basket fund and general budget support, district health offices should prioritize activities for VAS and deworming and ensure they are incorporated into their CCHPs and MTEFs. The planning should be carefully thought so that all the young children (age 6-59 months) at risk of vitamin A deficiency (VAD) and worm infestation are reached with the biannual VAS and deworming services. One of the most important factor is the accessibility of the distribution sites to the target population. The number and location of the distribution sites should be determined in collaboration with community leaders in order to improve and sustain the sense of ownership of the program by communities and get all the necessary support to the biannual events from community leaders and members. Moreover, community leaders have a better knowledge of the accessibility issues and how to reach the at- risk- populations.

Planning has to involve all the key stakeholders at community and district levels. Holding meetings of Primary Health Committee (PHC) alongside preparation of the biannual VAS and deworming events or at least making VAS and deworming events an important agenda in PHC meetings is paramount. The PHC meeting is headed by the District Commissioner (the representative of the President at district level) and it is attended by heads of all functional departments in the districts, and heads of community-based, faith-based organisations and non-governmental organizations operating in the district. Therefore, including VAS and deworming as agenda in PHC meetings broadens a chance of increased political will and high level decision makers support and thus committing resources in favour of the events.

It is good for the district to establish a general cycle of VAS and deworming activities and have a count-down check list in order to ensure that all preparations are in good timing as planned. The following cycle, built up from agreements in zonal and regional level VAS and deworming could help districts to ensure planning is done in time.

April–May: Intensive preparations for the June round of VAS and deworming events, The preparations could include organizing mass media announcements particularly using media agencies available in district; region or zone localities, community level promotions, training or orientation of health service providing teams; ensuring the vitamin A capsules, deworming and other key supplies like scissors, monitoring forms and plastic bags to facilitate safe disposal of used vitamin A capsules are already available in the districts and are distributed to service posts.

June: Implementation of VAS and deworming services, supervision and observational visits completion of tally and summary forms to record children and enable calculation of service coverage.

July–August: District completes summarizing report on the events including coverage of the services and a narration of important lessons to facilitate future improvements or sustain the good practices. The reports on coverage, successes, constraints and way forward are shared with the regional level which in turns compiles report from all district and share with the national level.

September–October: National level compilations and feedback to regions and districts with suggestions for improvement.

October–November: Intensive preparations for the December round of VAS and deworming events, The preparations could include organizing mass media announcements particularly using media agencies available in district, region or zone localities; community level promotions; training and orientation health service providing teams, ensuring the vitamin A capsules, deworming and other key supplies like scissors, monitoring forms and plastic bags to facilitate safe disposal of used vitamin A capsules are already in the districts and are distributed to service posts.

December: Implementation of VAS and deworming services, supervision and observational visits completion of tally and summary forms to record children and enable calculation of service coverage.

January–February: District completes summarizing report on the events including coverage of the services and a narration of important lessons to facilitate future improvements or sustain the good practices. The reports on coverage, successes, constraints and way forward are shared with the regional level which in turn compiles report from all districts and share with the national level.

March–April: National level compilations and feedback to regions and districts with suggestions for improvement.

It is important to note that in every activity components the details of different tasks and resource requirements have to be clear to members of the district and community planning teams. For example in training, a training plan will need to consider time needed, number of trainees, methodology, content and the budget implication. Similar considerations will be required for planning training of supervisors on skills and observation of the distribution activities and exit interviews to child caretakers.

In demand creation activities such as those on community mobilization, key messages should be developed, and a selection of audiences and channels are paramount. It is equally important to plan logistics of the supplementation system (detailed in part IV above), In summary the amount of key supplies (vitamin A capsules and deworming tablets) has to be determined and ordered, ensure provision for adequate storage and identify distribution mechanisms. Preferably requests should be made early enough to allow for distribution of the supplies within the district using the routine distribution and supervision without additional distribution costs.

2. Planning and Budgeting Tools (PBT)

There are different types of planning and budgeting tools that are used for facilitating realistic budgeting. The PBT developed by TFNC and HKI utilises the following parameters to make realistic budgets: target population, number of distribution posts, staffing of distribution posts, total number of supervisors, social mobilization costs, tally sheets, registers and other stationery costs, fuel costs and per diems. The PBT is an excel-format tool that is freely available and widely distributed for use. The district level Vitamin A focal person should have a copy of the PBT for anyone to use. If not, contact TFNC for guidance.

Part VI: Monitoring, Reporting and Evaluation

Monitoring is a continuous process of tracking and assessing whether the VAS and deworming activities are achieving the desired goal. Monitoring requires good supervision, a clear set of forms, indicators and reporting lines and national coordination of the data. In order to monitor VAS and deworming activities effectively there should be well-defined indicators and tools.

1. Monitoring and reporting

1.1 Purpose of monitoring

The purpose of monitoring VAS and deworming activities is to:

- Gather information and data for VAS and deworming activities planning and implementation
- Assess coverage of the service among children and post partum women
- Improve upon the performance of the program activities
- Document information for dissemination, reference and share best practices between relevant stakeholders, partners and the community at large.

1.2 Monitoring indicators

Table 5 summarizes the indicators for monitoring the performance of VAS and deworming.

Table 10: Monitoring indicators for VAS and deworming

<i>Information</i>	<i>Indicators</i>	<i>Means of verification</i>
Coverage during twice-yearly VAS and deworming events	<p>Percent of children aged 6-11 months supplemented with vitamin A</p> <p>Percent of children aged 12-59 months supplemented with vitamin A</p> <p>The proportion of children aged 12-59 months given a deworming tablet</p> <p>Number of districts conducting VAS and deworming within two months of expected date</p>	District, regional and national level implementation reports
Supervision	<p>Number of regions supervised by National level officials</p> <p>Number of districts supervised by regional officials</p> <p>Number of facilities supervised by district officials</p>	<p>National supervision checklist</p> <p>Regional supervision checklists</p> <p>District supervision checklists</p>

Supplies for twice-yearly VAS and deworming events	Proportion of health posts reporting stock-outs of vitamin A capsules and deworming tablets during the supplementation and deworming events	District implementation reports
	The proportion of vitamin A capsules and deworming drugs available of those required for the service round	
	Date of receipt of VAS supplies by district (from MSD)	District records
	Date of receipt of VAS supplies by health post	Health facility records
Coverage for routine VAS through EPI and the disease targeted approach	Date of receipt of deworming supplies by health post	Health facility records
	Proportion of 9 month old children supplemented at 9 months in routine EPI visits	HMIS (MTUHA), immunization and vitamin A tally sheets, health facility data and report books, and district processing files
	Proportion of 15 month old children supplemented at 15 months in routine EPI visits	
	Proportion of 21 month old children supplemented at 21 months in routine EPI visits	
Proportion of mothers supplemented within 8 weeks of delivering based on BCG doses given, current number of antenatal clients and expected births		
Sustainability	No. of CHMTs budgeting for VAS	Comprehensive and council health plan (CCHP) documents reviewed from Regional Administration and local governments departments or MoHSW
	Proportion of districts budgeting adequate amount of funds for VAS and deworming	
	Proportion of regions using VASD supportive supervision checklist	Supervision checklist template available and in use
	Proportion of districts using VASD supervision checklist	

1.3 Monitoring instruments

Tally sheets (Annex 2)

Tally sheets provide the 'raw data' for all VAS activities and are the basis for all coverage calculations, whether through routine or twice-yearly supplementation. **One tally sheet is used per distribution point per day** during campaigns, and there are separate tally sheets for VAS and deworming. The Vitamin A tally sheet is also used in routine EPI coverage, along with immunization tally sheets. They are filled in by health care workers at the time of dosing the child with vitamin A capsules and/or deworming tablets. The approved tally sheet is included in Annex 2. Tally sheets have separate sections for children 6-11 month olds and 12-59 month olds. Tally sheets should also report the number of health care workers and volunteers at the distribution point, if dosing is done during a campaign.

Using a tally sheet

At the start of the day before the campaign begins, the health worker should start a new tally sheet, fill out the information required, including date, supervisor and number of VA capsules in stock.

During the campaign activities, after each child is dosed with vitamin A or deworming tablets, the tally sheet should be marked by a health worker. For each child a slash should be made through the next consecutive number on the tally sheet. For example, if 2 children under 11 months have been dosed and another child of 7 months is dosed, the person taking the tally should slash a '/' or 'X' through the number 3 under the section 6-11 months on the left of the tally sheet to indicate the 3rd child dosed. A tally should be marked immediately after each child is dosed.

2 children dosed:

X	X	3	4
5	6	7	8

after 3rd child dosed:

X	X	X	4
5	6	7	8

The health worker/recorder should tally immediately after each child is dosed to ensure accurate counting, and not wait to tally after a 'batch' of children are dosed.

At the end of the day the final slash for each group of children should be the total number of children dosed for that group. This makes calculating coverage much easier. The total number of children 6-11 months and the total number of children 12-59 months should be recorded on the bottom of the page, and then the total number of children 6-59 months should be added up and also recorded. Then the supervisor should ensure the form is complete and sign it. The next day a new tally sheet will be used. Once the campaign is completed, all tally sheets (one per day) should be compiled, summarized and sent to the districts for further reporting upwards. This should be done within three days of the completion of the VAS distribution activities.

Common errors with tally sheets:

- Not using a new sheet every day
- Not tallying in consecutive order of numbering
- Not filling in the date of the distribution represented by the tally
- Not using the latest version of the tally sheet
- Not summarizing data

District officials should ensure that all tally sheets are summarized accurately and in a timely manner for reporting to the regions. At the time of the collection of the tally sheets, if there are errors on the tally sheets (not filled in completely or spaces missing in the slashing of the numbers) they should let the health worker responsible know immediately so they can clarify any confusion on the sheet. Once all the tally sheets are collected and at the district level, the district official should summarize all tally sheets by ward and/or village- continuing to disaggregate the data by age group (6-11 month olds versus 12-59 month olds). Ideally this should be done in an excel spreadsheet on the computer and not by hand. Once summarized by ward the district will fill out the Summary Report (Annex 3) for vitamin A and deworming event.

Data quality:

Spot checking of tally sheets against summarized versions should be done at every level possible. This means that for a random selection of health facilities, district summary reports and regional summary reports should be cross-checked against the original tally sheets to ensure data are summarized correctly.

Summary report forms for vitamin A and deworming event (Annex 3)

The District Summary Report form is used to summarize the data from the tally sheets at the district level. These reporting forms indicate the complete dates of the exercise, the number of villages covered and identifies which villages or wards were missed (did not report is different than missed). All tally sheets used across all days in all distribution sites should be summarized in one District Summary Report and sent to the regional officials. Unlike the tally sheets, the District Summary Report requires information about the target population of the sample. This is the total population of children 6-11 months and 12-59 months of age for VAS, and children 12-59 months of age for deworming in the area reported (district, ward, village). Using this information as the denominator, and the total number of children supplemented as the numerator, the coverage can be calculated as follows:

Coverage of VAS

$$\text{for 6-11 months old} = \frac{\text{total number of children 6-11 months of age supplemented}}{\text{total number of children 6-11 months of age targeted}}$$

Coverage of VAS

$$\text{for 12-59 months old} = \frac{\text{total number of children 12-59 months of age supplemented}}{\text{total number of children 12-59 months of age targeted}}$$

Coverage of deworming

$$\text{for 12-59 months old} = \frac{\text{total number of children 12-59 months of age dewormed}}{\text{total number of children 12-59 months of age targeted}}$$

Reporting forms are compiled again at the regional level where calculations and target population estimates should be double-checked for errors. Regional officials should use this opportunity to supervise districts on reporting and clarify any questions on how reporting forms should be completed. The regions compile the regional data by district, using a summary report form similar to the one at the district level (Annex 3) and submit this to the Tanzania Food and Nutrition Centre (TFNC). Any district not completing the exercise or not reporting by the deadline should be recorded as 0% coverage for onward reporting. These districts should be closely supervised to ensure the activity takes place in subsequent rounds.

TFNC at the national level is then responsible for compiling national data on coverage and ensuring that population estimates are correct. Any errors should be fed back to the level of the region and the district. TFNC manages and maintains a database on coverage data by district since the beginning of twice-yearly events and is the central point of information for all coverage data on VAS for the country.

Box 4: Recommended reporting schedule for coverage data

At the health facility level reports should be collected and submitted for compilation within **3 days** post event.

At the district level compilation should be done in **14 days** and submitted to regions

At the regional level they will take **7 days** to compile and cross check the accuracy of the data. Regions will then send the reports to the national level with copies to the zone.

Within one month all the reports should have reached the national level

At the national level feedback needs to be sent to the regions upon receiving the reports at least 3 months before the official commemoration of the forthcoming round.

1.4 Compiling coverage data during twice-yearly distribution rounds

Step 1: Tally sheets are filled out ONE PER DAY PER DISTRIBUTION SITE

Step 2: Tally sheets are summarized at the end of each day

Step 3: All tally sheets for the round within a distribution site (health facility) are compiled, summarized and included in a report to the district level.

Data should be summarized separately for 6-11 months old and 12-59 months old and not added together as overall coverage

Step 4: Districts compile all summarized tally sheets in an excel spreadsheet by ward.

Step 5: Districts double check summary data against tally sheet data for each facility.

Step 6: Districts send Summary Report to the Region.

Step 7: Regions compile all district summarized data onto a hard copy of the Summary Report and/or in an excel spreadsheet with data by district

1.5 Formulae for estimating coverage of VAS and deworming

- i) Coverage of VAS
for children 6-11 months = $\frac{\text{Number of children aged 6-11 months supplemented}}{\text{Half the census-based projection of the number of children aged 0 year (0-11 months)}}$
- ii) Coverage of VAS
for children 12-59 months = $\frac{\text{Number of children aged 12-59 months supplemented}}{\text{Census-based projection of the number of children aged 1-4 years (12-59 months)}}$

1.6 Reporting for missing data or missed districts

If there is no data available for a district it is important to account for the data in summary form. There are different scenarios why there may be no available data for a district:

1. The exercise was not completed
2. All health facilities have not reported or tally sheets were lost
3. Some health facilities completed the exercise while others did not
4. No data was filled out even though the exercise was completed

If a district did not complete the exercise within the expected time, coverage should be recorded as 0% and the total target population should be included in the denominator in any upwards, summarized, calculations of coverage.

If not all health facilities reported or some data are missing, all efforts should be made to capture the data from the health facility by direct supervision and follow up. If no tally sheets were used on the day of distribution or they were lost, coverage should NOT be estimated based on recall or supplies. This is because 200,000 IU capsules could have been used for children 6-11 months and accurate headcounts cannot be made. In this case, 0% coverage for that health facility should be used and all efforts should be made to ensure the tally sheets are used in subsequent rounds. If a tally sheet is missing for one particular day of the distribution, that day should be recorded as 0% coverage but all other days can be used for coverage.

Data on children covered can only come from actual tally sheets and not from estimates or supply counts. Without a tally sheet for a particular day or health facility, the coverage for that time shall be considered 0%.

2. Supervision

2.1 Regional Supportive Supervision for planning and budgeting

CCHP guidelines

All districts should be budgeting for VASD activities in their Comprehensive Council Health Plans in the amounts necessary to complete the exercise successfully. Supervisors at the regional level should take time to ensure budgeting is done accurately and sufficiently and that two VASD activities per year are incorporated into every CCHP. This supervision can be completed every December to be in line with final budget submission at the end of January each year.

Supply management and ordering

VAC supplies should be completed according to the process outlined in Chapter IV. Supervisors at the regional level can support coordination between districts and the national level to ensure supplies reach the districts in a timely manner and are in sufficient quantities.

PBT use and adequacy of planning

Many districts use the Planning and Budgeting Tool (PBT) mentioned in Chapter V as a means of planning and preparing for the twice-yearly VASD event. Regional supervisors can review the PBT to double check that sufficient staff, transport, health posts and per diems were calculated to ensure a successful event.

2.2 Regional and District Supervision for implementation**Supervisory checklists for the day of the exercise-Regional**

At the regional level, supervision can be completed on the day of the district's planned VASD exercise by visiting the District Health Offices to meet with District Vitamin A focal persons and co-supervise a health facility visit with District level supervisors. Regional supervision checklists are available as a tool to make sure all aspects of the program are reviewed. (See Annex 4).

Supervisory checklists for the day of the exercise-District

District level supervision to the health facility must occur during VASD days of the twice-yearly event. This is to ensure that health workers are distributing vitamin A supplements and deworming tablets appropriately and according to guidelines. A supervisory checklist for District level supervisors is available (see Annex 4).

Routine & Postpartum VAS supervision

Regional supervisors should also ensure periodically that routine VAS is occurring and conducted according to guidelines. This means checking with EPI clinics, officers and registers to make sure distribution of vitamin A supplements to children during the EPI visits is conducted appropriately and recorded. Supervision must also ensure that VACs are in adequate supply in health facilities and stocks are not expired. Similarly registers, stocks and health workers should be supervised in labour wards to ensure that post partum VAS is being given according to protocol.

2.3 Regional Supervision for reporting**Accuracy and timeliness in reporting coverage**

After twice yearly supplementation is completed, tally sheets need to be summarized, compiled and sent upwards for further summarization, as described earlier in this chapter. Regions are responsible for compiling all district data for reporting to the national level and should feel comfortable and confident about the accuracy of the data. Concerns should be addressed immediately should districts fail to report coverage tallies within two weeks of the completion of the VAS event as the schedule indicates in Box 4.

Spot checking of tally sheets against summarized versions should be done at every level possible (district, region and national levels). This means that for a random selection of health facilities, district summary reports and regional summary reports should be cross-checked against the original tally sheets to ensure data are summarized correctly.

Assurance of MTUHA (HMIS) reporting on VAS

Reporting for routine VAS should be incorporated into the Health Management Information System including EPI-based VAS and postpartum VAS, however, supervision is necessary to ensure the data recorded are valid and accurate. During supervision, regional level supervisors should ask for register books and check for completion of and accuracy of reporting in these books.

3. Evaluation

Periodic evaluations of the VASD program are done at the national level in collaboration with partners. These evaluations are done to determine if the program is having the expected impact. Monitoring indicators are based on program outcomes like coverage rates and supply issues, whereas evaluation indicators are focused more on long term overall impact. Table 6 summarizes some of the key indicators around sustainability of the program as well as reduction in vitamin A deficiency and anaemia.

Table 11: Key evaluation indicators for VAS and deworming program

<i>Evaluation Topic</i>	<i>Indicator</i>	<i>Means of verification</i>
Sustainability	Proportion of children aged 6-59 months supplemented with vitamin A during treatment of xerophthalmia, measles, persistent diarrhoea, severe acute malnutrition, lower respiratory tract infections	Health facility treatment practice survey to assess the utilization of VAS in the disease targeted approach. The district to national level to do it through examining health facility diagnosis and treatment records
	VASD activities included in national CCHP guidelines	Annual review of CCHP guidelines to ensure inclusion continues
Impact of VASD ¹ on vitamin A deficiency	Proportion of children aged 6-59 months who are vitamin A deficient	Independent national vitamin A status survey or the Demographic and Health Survey (DHS), micronutrient survey
Impact of VASD ¹ on anemia	Proportion of children aged 12-59 months who are anaemic (Hemoglobin assessment)	Independent national deworming and anaemia survey or the DHS survey

¹ Reductions in VAD and anemia can be attributed to deworming as well as VAS because deworming improves absorption of vitamin A and some anemia can be due to vitamin A deficiency.

3.1 Management and validation of coverage data

Periodically, VAS and deworming coverage data needs to be verified or validated through another data system. This is because (1) administrative data through tally sheets and reporting are prone to error and (2) target populations are based on projections from census data and do not always reflect the true population of children 6-59 months of age. The best way to validate coverage data is through a post event coverage survey.

Post event coverage surveys

Coverage surveys can be done at the national, regional or district level. They are conducted within one month of the VAS distribution to ensure accurate recall by caretakers for the services received during the twice-yearly events. These surveys are organized and managed at the national level through the Tanzania Food and Nutrition Centre with various partners. Previous coverage surveys have been conducted in 2004 and 2006, and have shown that administrative coverage data generally overestimate true coverage by about 8-10%.

3.2 Program evaluation**Sustainability Assessment**

A sustainability assessment was conducted in 2007 to determine the likelihood of the VAS program being institutionalized into the government health system. Since decentralization and the basket fund was created, districts plan and budget for their VAS days and therefore Tanzania is closer to managing a sustained VAS program than many other countries in Africa. The tools from the sustainability assessment have been used as supervisory checklists and can be accessed for use by requesting for the tools at the national level.

Cost assessments

Periodic cost assessments can be done to examine the cost-benefit of conducting VAS. Because vitamin A supplementation has been determined to be one of the more effective child survival interventions the aim is not to decide its use but how to reduce costs so that the program can be sustained at the national level without external support. The last cost assessment was conducted in 2005. Results indicate that the VAS costs roughly \$4 million and 58% of costs are towards personnel costs. 81% of total costs are distributed/spent at the district level – which is understandable given the decentralized scheme. The cost per child doses including all programming costs is roughly \$0.71.

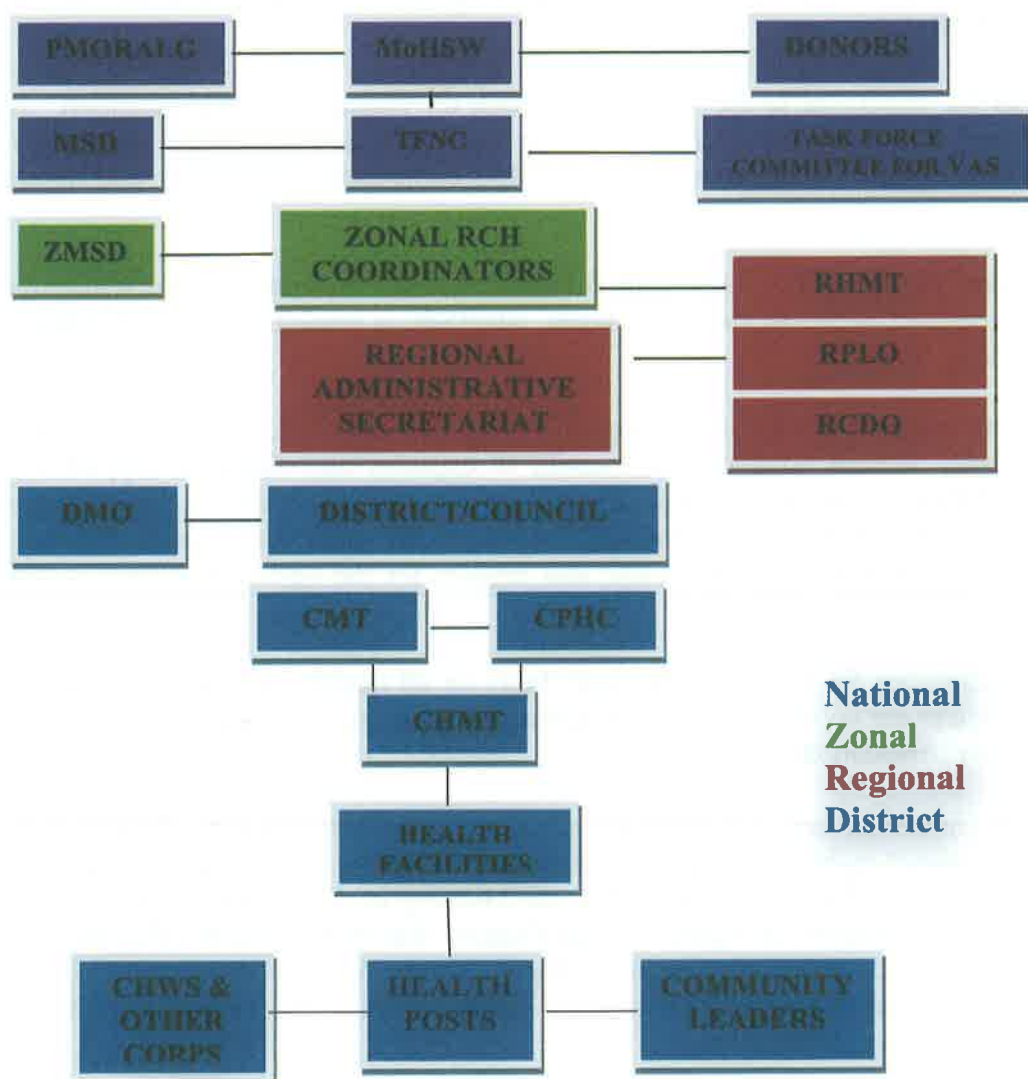
Part VII: Obligation of stakeholders

1. Overview

The success of VAS and deworming depends upon good collaboration between multiple stakeholders. The main stakeholders include the government and its ministries and institutions responsible for health, regional administration and local governments and community development, gender and children affairs. Other stakeholders include the Medical Stores Department, UN agencies, non-government organizations (NGOs), faith-based organizations (FBOs), community-based organizations, and the media.

The roles and responsibilities of these stakeholders are highlighted in this section. Box 6 summarizes the stakeholders at various levels.

Box 5: Vitamin A Supplementation Program Stakeholders



Under the current administrative set-up, the structure of the health-service delivery system is divided into four levels: the national, zonal, regional and district levels. Much of the decision-making has been devolved to local authorities in their districts and communities. Local authorities, generally known as councils, are of four types: rural, town, municipality, and city councils.

The role of MoHSW in vitamin A supplementation and other health interventions is to formulate policies, guidelines and protocols, and to coordinate their implementation. MoHSW has two other responsibilities: setting minimum quality standards for health-service delivery, and coordinating among public and local government service authorities.

MoHSW coordinates all activities related to planning, implementation and evaluation of vitamin A supplementation at all levels. It provides technical support to the regions and councils through TFNC and programs such as EPI, and the safe motherhood and community-based health care program. MoHSW chairs the national task force on vitamin A supplementation. However, implementation of programs managed by individual ministries must be approved by Prime Minister's Office -Regional Administration and Local Government (PMORALG).

TFNC serves as the secretariat to the national taskforce on vitamin A supplementation. It provides guidance on supplementation to regions, and all logistical support, especially relative to supplies, orientation of service providers, data compilation, evaluation, and report preparation.

The Medical Stores Department is responsible for distribution of vitamin A capsules from its central stores to district councils via zonal stores. MoHSW is responsible for all capsule transportation costs.

The main partners involved in vitamin A supplementation are UNICEF, CIDA and USAID. CIDA has provided in-kind donations of vitamin A capsules and financial support for operation costs. UNICEF provides technical and financial support, including the offshore procurement of vitamin A capsules; production of technical guidelines, communication, training, monitoring and evaluation materials; and support for the operational costs in the field.

The task force committee for VAS is an advisory body on all matters pertaining to VAS in Tanzania. The advices are given at all levels of implementation from community to national, during and post implementation of VAS activities.

Several other organizations have supported the program at the national level through their participation in national taskforce meetings. Those organizations include the Ministry of Community Development, Gender and Children, the Ministry of Agriculture Food Security and Cooperatives, the Ministry of Education and Culture, the Medical Stores Department, UNICEF, WHO, USAID, Helen Keller International, World Vision International, Japan International Cooperation Agency, Rotary Club International, Plan Tanzania, and the Tanzania Home Economics Association.

MoHSW zonal-level authorities serve as link between its central structure and the regions, particularly on all aspects of reproductive and child health. The zones team up with the regional secretariats under their service areas to provide supportive supervision and conduct

training for district health managers on all health aspects, including vitamin A supplementation.

The regional health management team, under the regional secretariat, provides technical support and supportive supervision to districts. It also orients district staff on the important aspects of vitamin A supplementation and related health interventions. The regional medical officer is one of the technical advisors to the regional administrative secretary. Other technical advisors who participate in planning and supervision include those responsible for community development, education, planning, local government administration, social welfare, agriculture and livestock, and water and sanitation.

Since decision-making has been devolved to local government authorities, the districts are responsible for the development of comprehensive council health plans, resource management, distribution of capsules to service outlets, stock assessment, compilation of coverage data, reporting on implementation to the regional secretariat and development of corrective actions. The council health management teams, in collaboration with other functional offices under council director, mobilize communities. Community leaders, community health workers, and traditional birth attendants play a social- mobilization role. Community health workers in some areas also assist in the administration of vitamin A capsules.

Specific responsibilities of the government, donors and other partners are detailed in greater length below.

2. Government

The government at various levels has a great obligation in the implementation of VAS and deworming activities. The obligation of the government towards successful VAS and deworming stretches from the community to central level. These obligations include the following:

2.1 National level

The government at national level, acting through the MoHSW/Tanzania Food and Nutrition Center, MoHSW/Reproductive and Child Health Unit, EPI and Medical Stores Department has the following responsibilities:

- Formation of coordinating bodies and mechanisms for coordination
- Coordination of VAS and deworming activities through the Ministry of Health and Social Welfare (MoHSW).
- Formulation, review and dissemination of policy and policy guidelines
- Procurement and distribution of adequate supplies of vitamin A supplements and deworming drugs based on available data on target population.
- Provision of technical support to zones, regions and districts in order to ensure compliance and adherence to set policy and policy guidelines. This include designing, recommending planning and budgeting tools and training packages.
- Advocacy and social mobilization of the programs to regional and district level policy makers through meetings and related advertisements through popular mass media including radio, newspapers and televisions. Equally important are letters to local authorities to advise them on important current trends in control of micronutrient

deficiencies including how best to sustain the twice-yearly VAS in all the district councils.

- Monitoring and evaluation of the implementation of VAS and deworming activities. The national level will need to collaborate with local authorities to design, review and improve on monitoring tools and processes and track performance in coverage and sustainability particularly of funding VAS and deworming at district and community levels. Based on findings from the monitoring, the national level should advise local authorities on ways to improve their program including increasing and sustaining high VAS and deworming coverage.
- Compiling national VAS and deworming activities status reports from regional and district reports and disseminating them to stakeholders to facilitate them to advise better on measures to improve VAS and deworming program and other integral interventions, nationally.
- Provision of feedback on performance of VAS and deworming activities to regions and districts. The feedback to cover such matters as national coverage of VAS and deworming by district shared with all key leaders in each district. This measure facilitates districts to compare their performance with those of other districts and encourages them to maintain the high coverage already attained or strive to improve it to be among the best performers. Feedback should also cover qualitative aspects of the program like true and false community rumours and suggest ways to improve community awareness and thus increased acceptability of the services by communities.
- Mobilization of financial, technical and material resources for national level activities and sensitizing regions and districts to solicit funds for activities planned at these levels.
- Developing, producing and disseminating Information Education and Communication (IEC) materials and messages for VAS and deworming activities and disseminate them for use at regional, district and community levels. The national level is required to guide the regions and districts to develop area specific materials, where need arises to do so.
- Capacity building, conducting operational research and training on vitamin A, VAS, worm infestation and deworming and use to use the findings to guide local authorities on actions/measures to accelerate or sustain good actions in VAS, deworming and other interventions that may be integrated with VAS and deworming services.

2.2 Zonal level

Roles of the government at zonal levels in the implementation of VAS and deworming activities are:

- Maintaining and sustaining an effective link between the MoHSW and regions including coordinating trainings and, acquisition of program data for action from their constituent regions and districts.
- Conducting training of health managers and service providers in local authorities under their catchment areas on VAS, deworming and other components that may be integrated with the VAS and deworming services.
- Providing technical support to regions and districts in their catchment areas on VAS and deworming activities. This includes designing, recommending planning and budgeting tools, training packages and training districts and regional managers on recommended health care practices.
- Ensuring that the implementation of VAS and deworming activities adhere to the set national policies and implementation guidelines. This can be done through regular

monitoring in the course of providing supportive supervision to their constituent regions and districts.

- Compiling zonal VAS and deworming activity reports and sharing with partners in the zone and the national level.

2.3 Regional level

The obligations of the government at regional level include:

- Providing supportive supervision to districts. This involves spot visits to health facilities and communities in their constituent districts to assess the various health service practices including VAS and deworming and providing on site advice to the service providing units and community leadership. Then the regional team needs to compile report to share with the district advising on actions for improvement or sustaining the good practices observed in sample communities to the entire district. During supportive supervision, the regional team will also review program reports and discuss health managers on matters pertaining to the status of VAS coverage in all communities, measures to improve or sustain high coverage being taken by the district, and the provide advice on the best course of action.
- Translating, adapting and disseminating national health policies into perspectives of its constituent districts and set a momentum for their operationalization in local authority settings.
- Coordinating VAS and deworming activities at regional level through the regional secretariat. The coordination involves among others reviewing district plans and ensuring that they have prioritized VAS and deworming.
- Advocacy and social mobilization to district level policy and decision makers on development plans.
- Mobilization of financial, technical and material resources for regional level activities and facilitating districts to solicit funds for VAS and deworming activities.
- Capacity building/training on current facts and recommended best health practices to council health management teams.
- Compiling regional VAS and deworming reports from district reports, sharing with stakeholders within the region and submitting the same to national level.

2.4 District level

At district level the government should do the following:

- Mainstreaming VAS and deworming programs into Comprehensive Council Health Plans (CCHP). District health authorities need to advocate for increased consideration of VAS and deworming in their development plans.
- Mobilization of financial, technical and material resources for district, health facilities and community level VAS and deworming activities.
- Conducting monitoring and evaluation of VAS and deworming activities at district level. The district level will need to collaborate with partners and community and faith based organizations operating in the district to produce sufficient copies of monitoring tools and processes and track performance in coverage and sustainability VAS and deworming at district and community levels. Based on findings from the monitoring, the district level needs to devise to improve or sustain good practices in their program including increasing and sustaining high VAS and deworming coverage.

- Providing technical support to health facilities and communities/"Mtaa" in providing VAS and deworming services. This includes training health service providers on best health care practices including VAS and deworming.
- Procurement and distribution of adequate amount of vitamin A supplements, deworming drugs and related supplies for health facilities and other service sites in their administrative areas.
- Organizing VAS and deworming events and
- Conduct training for service providers on management of VAS and deworming services.
- Collection, compilation, analysis, interpretation and utilization of data from ward levels for improving performance of VAS and deworming programs. Equally important, sharing the data/reports with other stakeholders in the district and submitting them to regional level.
- Allocation of adequate and skilled human resource to health facilities and other service delivery sites for VAS and deworming.
- Advocacy and social mobilization in favour of VA and deworming programs to community leaders and communities through meetings, directives, public announcements and popular mass media.
- Identification of high performing villages/"Mtaa", wards and divisions and use their experience as models to stimulate action in low performing areas.
- Identification of low performing areas and plan for appropriate support.

2.5 Ward level

The obligations of the government at ward level are:

- Advocacy and social mobilization to village/"Mtaa" leaders and communities.
- Provision of technical support to villages/"Mtaa"/hamlets in collaboration with health workers in the area. The ward will ensure that villages and "Mitaa" have planned reasonable/ sufficient number of service sites and service providers for the VAS and deworming services. Equally important, the ward level will need to provide.
- Facilitating collection, compilation, analysis and utilization of data from its catchment area for improvement of the performance of VAS and deworming activities.
- Submission of VAS and deworming activities performance reports to the district.
- Including VAS and deworming in their priority plans to be considered at district/municipal /town council level.

2.6 Village ("Mtaa") level

The obligations of the village/"Mtaa" government are:

- Social mobilization of members of households to bring their children for the VAS and deworming services.
- Facilitating provision of vitamin A supplements and deworming drugs to targeted clients. The village will ensure arranging a reasonable number of service sites and provides sufficient service providers for the VAS and deworming services. Equally important, the village level will need to provide necessary assistance to service providers to ensure that supplies reach all planned service posts in good time and all targeted children aged 6-59 months get VAS as recommended. Equally important the village through its health committee need to ensure that women of child bearing age and community in general are informed of the importance of postpartum VAS and encourage to get the VAS service immediately after delivery.

- To facilitate supervision of implementation and collecting, compilation, analysis and utilization of VAS and deworming performance data for improved performance among village and “Mtaa” units in the ward.
- In collaboration with supervisors from the ward and district levels, facilitate **submission of VAS and deworming performance reports to the district level**. Motivation of service providers during implementation of vitamin A supplementation and deworming.

3. International organizations

International partners, including UN agencies, regional institutions, bilateral organizations and international development agencies should place health and nutrition of young children on the global public agenda. The role of international organizations is mainly the provision of technical and financial support to the government at appropriate administrative levels for the planning, implementation and evaluation of VAS and deworming programs. Specifically the role and responsibility of the international community include:

- Participation in National Task Force meetings on VAS and deworming thus contributing to technical aspects of the programs.
- Advocate for increased human, financial and institutional resource needed for the implementation of VAS and deworming activities at all levels.
- Supporting national capacity building for VAS and deworming activities.
- Under the guidance of the government, participate in facilitation, social mobilization and advocacy and implementation of the program activities at appropriate administrative levels.
- Developing norms and standards for effective VAS and deworming activities.
- Sharing new technological developments and experiences on VAS and deworming from other countries.

4. Community based organizations

The successful implementation of VAS and deworming activities depends also on the active participation and collaboration of social partners such as non-governmental organizations (NGOs), community based support groups, community based organizations (CBOs), civil societies and faith based organizations (FBOs). The roles of these partners include:

- Social mobilization of community members to influence popular behaviours towards VAS and deworming interventions.
- Communicating accurate, up to date information about child health and nutrition including the importance of VAS and deworming of young children.

5. Media

The successful implementation of VAS and deworming activities requires dissemination of correct and appealing information to community members. Therefore mass media organization and news agencies have a great role to play in this program. Their roles and responsibilities include:

- Designing, developing and disseminating correct and appealing information on health of children.
- Collaborate with technical personnel in health sector to correct any myths and misconception that may arise as regards to VAS and deworming activities.
- Create awareness to the communities on importance of VAS and deworming.

Annex 1: Activity cycle for twice-yearly vitamin A supplementation

One month before VAS exercise

- Make sure that adequate supplies are ordered and plans for delivery to districts and health centres is clear
- Hold meetings with those who will remind the community about the planned activities
- Conduct orientation or refresher training of service providers
- Distribute supplies

In the month of VAS exercise

- Promotion activities at community level (week before and during CHW)
- Provision of vitamin A and deworming to children, and completion of tally sheets.
- Monitoring using spot checks and supervisory visits

Within one month after VAS exercise

Review meetings with teams (this is vital for planning for next time)

- Completion of District Summary Report

Second and third month after VAS exercise

- Preparation at regional and national level reports on activity
- Analyze bottlenecks to coverage and performance
- Begin planning for activities of next distribution with attention on supply requirement

Annex 3: Summary report form for vitamin A and deworming event

DISTRICT SUMMARY REPORT- VITAMIN A & DEWORMING EVENT

For all Levels of Reporting for Summarization of VAS Distribution Days

Circle the level at which this form is being filled: Health Post → Health Facility → District (upwards reporting done electronically)

Name of Health Facility / District / Region filling form: _____

Dates of vitamin A supplementation campaign in area: from _____ to: _____ (full range of dates)

PART 1 TECHNICAL PART

Coverage report:

Vitamin A Supplementation								Deworming	
List of Summarized Sub-distributions points*	6-11 MONTH OLD CHILDREN ¹		12-59 MONTH OLD CHILDREN ²			TOTAL COVERAGE 6-59 MONTH OLDS $(B+E)/(A+D) \times 100\%$	Dewormed children 12-59 months G	% Coverage 12-59 month olds dewormed $= (G/D) \times 100\%$	
	Target population of 6-11 month olds A	Supplemente d 6-11 month olds B	% Coverage of 6-11 month olds $= (B/A) \times 100$	Target population of 12-59 month olds D	Supplemented 12-59 month olds E				% Coverage 12-59 month olds $= (E/D) \times 100\%$
Total									

*For health posts this list would be DATES of distribution, for health facilities this would be villages/streets, for districts this would list WARDS or FACILITIES, for regions this would list DISTRICTS

¹Calculate from NBS as half of the number of children aged 0 years

²Calculate from NBS by adding number of children aged 1-4 years

Stock report:

SUPPLIES	PREVIOUS STOCK (A)	STOCK RECEIVED (B)	STOCK UTILIZED (C)	BALANCE (A+B-C)	CHECK IF STOCK OUT OCCURRED	PLANS FOR REMAINING STOCK (ROUTINE SERVICES OR SAVED FOR NEXT ROUND?)
Vitamin A (100,000 IU, blue capsules)						
Vitamin A (200,000 IU, red capsules)						
Mebendazole (500mg)						

Narrative report

Strategies utilized to attain the coverage reached including special strategies to reach the hard to reach	
Please list low performing areas at any level (facilities, villages, districts) and reasons for low performance	
Further support needed	

SUMMARY OF FINANCIAL REPORT (DISTRICT-LEVEL DATA* FOR FINANCIAL YEAR)

ESTIMATED BUDGET (TSHS)	ANNUAL MOHSWSWSW (basket fund)	APPROVED (COMMITTED) ANNUAL CONTRIBUTION (TSHS)		TOTAL AMOUNT ACTUALLY SPENT THUS FAR (INCLUDING NON-COMMITTED FUNDS) (TSHS)
		District council	Government Block Grant	
			Other partners (please specify)	

*This information should be provided at the district level only

Annex 4: Supervisory Checklists

Supervisory Checklist for REGIONAL Health Management Team on VAS and Deworming Program

The purpose of checklist is to evaluate provision of biannual vitamin A supplementation and deworming (VASD) to children aged 6-59 months at both the district offices as well as the health facility/community catchment area level and take/advise on immediate corrective measures and future improvement actions

Names of Districts visited	Date of Supervision:
District 1 _____	_____
District 2 _____	_____
District 3 _____	_____
District 4 _____	_____
District 5 _____	_____

Name of Supervisor

CHECK OFF FOR EACH DISTRICTS

District 1 District 2 District 3 District 4 District 5
 Note: Boxes can be filled with check marks or numbers, as this is a tool only for your use and records



COMMENTS:

- a Example: Facility visited on date of supervision by CHMT member
- Previous performance of District**
- 1 Confirm number of target children (6-11 months and 12-59 months) matches regional records
- 2 Cross-check previous coverage of district for VAS to know if low performing (<80%)
- 3 Cross-check previous coverage of district for deworming to know if low performing (<80%)
- Logistics supply**
- 4 Sufficient **100, 000 I.U.** Vitamin A capsules available in the district according number of targeted children aged **6-11 months** in the service area (see MSD delivery forms)
- 5 Sufficient **200, 000 I.U.** Vitamin A capsules available in the district according to number of targeted children aged **12-59 months** in the service area
- 6 Sufficient deworming tablets (mebendazole or albendazole) available for all targeted children aged 12-59 month in the district
- 7 Capsules and tablets available in the district **within 2 months** of the distribution round (check date on MSD forms)
- 8 Capsules and tablets available at the health facilities **within one week** of distribution round
- 9 Posters and job aids on vitamin A received by district and made available to communities and facilities (ask directly)
- 10 Tally sheets & summary sheets are available and distributed to service areas within one week of distribution round
- 11 Scissors for opening vitamin A capsules available and distributed to service areas within one week of distribution round
- 12 Wipes or towels procured and distributed to services areas within one week of commencement of implementation
- Supervision and Monitoring at the District Level**
- 6 At least **50%** of facilities being visited by district supervisors during round
 Check total number of facilities in district and supervision schedule
- 7 Sufficient **staff** posted at each distribution site (2-3 staff per site)
- 8 Adequate number of temporary/mobile posts established, as necessary
 Mobile posts established in areas with lower coverage or high population density (ask directly)
- 9 If district coverage last round was not over 90% new strategies to reach more children have been established
- 10 Social mobilization/sensitization efforts made at the district level

Spot Check Supervision at the Facility Level

Visit one health facility per district on a day of the event as a spot check- this should be randomly selected from the list of distribution sites

Observe a health service provider for VAS and deworming and record the following for each provider

- 11 Child age is determined before administration of VAS
- 12 The service provider informs caretaker about the importance of vitamin A for her child
- 13 The service provider gives the correct age-specific dose of vitamin A
 - 6-11 month olds= 100,000 IU capsule (or if not 100,000 capsules available, HALF the drops from a 200,000 IU capsule)
 - 12-59 month olds= 200,000 IU capsule (all drops from the capsule; if not available administer all drops from 2 capsules of 100, 000 I.U)
- 14 The service provider correctly administers the vitamin A capsule
 - Capsule tip is cut open with clean scissors, capsule contents are dropped into open mouth (not whole capsule)
- 15 The service provider records the vitamin A dose properly on tally sheet
 - Proper section on the tally sheet for the right age of the child
- 16 Vitamin A is kept out of sunlight/freezing conditions
 - Capsule container cloised as necessary, capsules not displayed on open sun and capsules not refrigerated
- 17 Empty (used) vitamin A capsules safely disposed into a container
 - Preferably plastic bags or container that will not allow spread of oil from the capsules to environment
- 18 The service provider informs caretaker about the importance of deworming for her child
- 19 The service provider correctly provides a correct deworming dose
 - One tablet for children 12-59 months only (not to children under 1 or older than 5)
- 20 The service provider correctly administers the deworming tablet
 - Child does not spit out or vomit tablet. For children unable to swallow capsule is crushed hygenically, mixed with clean water and given as a pastegiven as powder
- 21 Social mobilization efforts made by the health facility to ensure families in catchment area are aware of activity
- 22 All supplies are within expiry date
- 23 Posters on vitamin A available for community members to view at the health facility or service post
- 24 Vitamin A job aids (dosing charts) available and being used at health facility
- 25 Deworming job aids (dosing charts) available at health facility and being used

ADDITIONAL COMMENTS OR NOTES:

Supervisory Checklist for Council Health Management Team on VAS and Deworming Program at Community and Service post levels in Tanzania

The purpose of district checklist is to evaluate provision of biannual vitamin A supplementation and deworming (VASD) to children aged 6-59 months at health facility/community catchment area level and take corrective measures and future improvement actions. These forms are intended for internal use only to ensure consistent supervision across sites

Names and Type of Facilities visited: _____ Date of Supervision: _____

Facility 1 _____

Facility 2 _____

Facility 3 _____

Facility 4 _____

Facility 5 _____

Name of Supervisor

CHECK OFF FOR EACH FACILITY

Facility 1 Facility 2 Facility 3 Facility 4 Facility 5
 Note: Boxes can be filled with check marks or numbers, as this is a tool only for your use and records

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- Logistics supply**
- 1 Sufficient 100, 000 I.U. Vitamin A capsules available at the health facility/post according to number of targeted children aged 6-11 months in the service area
 - 2 Sufficient 200, 000 I.U. Vitamin A capsules available at the health facility/post according to number of targeted children aged 12-59 months in the service area
 - 3 Sufficient deworming tablets (mebendazole or albendazole) available for all targeted children aged 12-59 month in the service area
 - 4 All supplies are within expiry date
 - 5 A pair of scissors to help opening vitamin A capsules
 - 6 A pair wipe or towel to clean oil off hands
 - 7 A container for safe disposal of used vitamin A capsules

Direct Supervision and Monitoring
Observe a health service provider for VAS and deworming and record the following for each provider

- 8 Child age is determined before administration of VAS
- 9 The service provider informs caretaker about the importance of vitamin A for her child
- 10 The service provider gives the correct age-specific dose of vitamin A
 - 6-11 month olds= 100,000 IU capsule (or if not 100,000 capsules available, HALF the drops from a 200,000 IU capsule)
 - 12-59 month olds= 200,000 IU capsule (all drops from the capsule; if not available administer all drops from 2 capsules of 100, 000 I.U)
- 11 The service provider correctly administers the vitamin A capsule
 - Capsule tip is cut open with clean scissors, capsule contents are dropped into open mouth (not whole capsule)
- 12 The service provider records the vitamin A dose properly on tally sheet
 - Proper section on the tally sheet for the right age of the child
- 13 Vitamin A is kept out of sunlight/freezing conditions
 - Capsule container closed as necessary, capsules not displayed on open sun and capsules not refrigerated
- 14 Empty (used) vitamin A capsules safely disposed into a container
 - Preferably plastic bags or container that will not allow spread of oil from the capsules to environment
- 15 The service provider informs caretaker about the importance of deworming for her child
- 16 The service provider correctly provides a correct deworming dose
 - One tablet for children 12-59 months only (not to children under 1 or older than 5)
- 17 The service provider records the deworming dose properly on tally sheet
 - Proper section on the tally sheet for the right age of the child
- 18 The service provider correctly administers the deworming tablet
 - Child does not spit out or vomit tablet. For children unable to swallow capsule is crushed hygienically, mixed with clean water and given as a pastegiven as powder
- 19 Social mobilization efforts made by the health facility to ensure families in catchment area are aware of activity
- 20 Posters and job aids posted visibly at the health facility

